Cognitive Science

Introduction

Cognitive science is the study of the mind, information systems, and the interface of these with technology. Its goal is to understand mental and informational processes, such as perception and knowledge representation, through experimental methods and the construction of theories and models at the computational and neural levels. In its application, cognitive science aims at the development of smart devices, such as artificial intelligence technologies and imaging technologies, which extend and enhance human capabilities.

Given the multidimensional nature of mind and intelligence, cognitive science combines a number of disciplines in its investigation: biology, computer science, education, mathematics, neuroscience, philosophy and psychology. The broadly based interdisciplinary approach will provide students with the type of flexible thinking and problem solving that are essential to serve the evolving technological needs of society in the 21st century. In addition, cognitive science students will develop skills in effective communication, creative thinking, hypothesis generation, experimental design, data analysis and interpretation, mathematical and computer modeling, and statistical analysis. Students with these skills will be well situated to meet the needs of the information industry, human factors engineering, medicine, including imaging and analysis, neurological testing, human performance testing, education, assistive technologies, and basic research.

General Requirements
Bachelor of Science Degree

Total for graduation	120 credits
General Education	40 credits
Major Studies	50-51 credits
Free Electives	7-15 credits
Concentration or Minor	15-22 credits

Program Requirements

General Education

40 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — 6- 8 credits

MATH-121	Introduction to College Math II *or*	
MATH-153	Calculus I *or*	
MATH-156	Calculus and Analytic Geometry	4-5
STAT-130	Elementary Statistics *or*	
STAT-320	Statistical Methods	2-3

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

Credits must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, philosophy and performing arts.

E. Social and Behavioral Sciences — 9 credits

PSYC-110	General Psychology	3
ANTH-220	Cultural Anthropology *or*	
ANTH-250	The Human Past	3

Remaining credits must be from economics, geography, political science, and sociology.

F. Natural Sciences (with Lab) — 4 credits

BIO-132	Human Biology	4

G. Technology — 2 credits

Major Studies

50-51 credits required

Cognitive Science Required Courses — 32 credits

COG-101	Cognitive Science I	4
COG-202	Cognitive Science II	4
XXX-XXX	Cognitive Science Research Studio	8
CNS-481	Mathematics and the Brain	4
CS-144	Computer Science I	3
LOG-2XX	Symbolic Logic	3
PHIL-3XX	Philosophy of Mind	3
PSYC-290	Interpreting Psychological Research	3

Selective Courses — 18-19 credits

Psychology

Take any two courses from the following:

PSYC-270	Social Cognition and Behavior	3
PSYC-335	Motivation and Emotion	3
PSYC-3XX	Reasoning and Decision Making	3
PSYC-430	Perception	3
PSYC-442	Cognitive Processes	3

Natural Sciences

BIO-234	Physiology and Anatomy	4

Take any two courses from the following:

BIO-360	Introduction to Cognitive Neuroscience	3
PHYS-2XX	Neurophysics	4
CHEM-125	Chemistry for Health Sciences	5
CHEM-135	College Chemistry I	5

Electives

7-15 credits required

Elective credits are chosen under advisement of program director.

Self-Planned Concentration or Minor

15-22 credits required

With approval of program director, students have the option of completing a minor or a self-planned concentration to fulfill 120 credit overall program requirement.